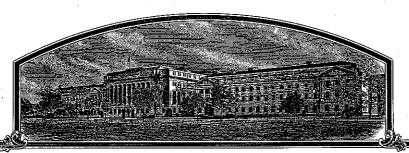
200500028

No.



THE UNIMED SHATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Holden's Joundation Seeds L.F.C.

PLACENS, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT. THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANE VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC PRENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE HT TO EXCLUDE OTHERS FROM SELLING THE VARIETY OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR TING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE URPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

CORN, FIELD

'LH370'

In Costimum Marrest, I have hereunto set my hand and caused the seal of the Hant Mariety Frotestion Office to be affixed at the City of Washington, D.C. this thirtieth day of January, in the year two thousand and eight.

Allest:

QC-3-

Commissioner Plant Varioty Protection Office Agricultural Marketing Service Collinary F. Mayor of Agriculture

| REPRODUCE LOCALLY, Include form number and date on all i | aproductions | • | Form American CMD No. of the com- | | |
|--|--|--|--|--|--|
| U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE SCIENCE AND TECHNOLOGY - PLANTVARIETY PROTECTION OFFICE | | Form Approved - OMB No. 0581-0055 The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1996. | | | |
| APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE (Instructions and information collection burden statement on reverse) | | Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426). | | | |
| NAME OF OWNER | | 2. TEMPORARY DESIGNATION OR | 3. VARIETY NAME | | |
| Holden's Foundation Seed | is L.L.C. | EXPERIMENTAL NAME None | LH370 | | |
| 4. ADDRESS (Street and No., or R.F.D. No., City, State, and | ZIP Code, and Country) | 5. TELEPHONE (include area code) | FOR OFFICIAL USE ONLY | | |
| 3100 Sycamore Road | | (815) 758-9281 | PVPO NUMBER | | |
| DeKalb, IL 60115 U.S.A. | | 6. FAX (Include area code) (815) 758-4106 | 200500028 | | |
| IF THE OWNER NAMED IS NOT A "PERSON", GIVE FOR ORGANIZATION (corporation, partnership, association, etc. | M OF 8. IF INCORPORATED, GIVE | 9. DATE OF INCORPORATION - | 1 6 | | |
| Corporation | Delaware | August 27, 1999 | Dec. 6, 2004 | | |
| 10. NAME AND ADDRESS OF OWNER REPRESENTATIVE | S) TO SERVE IN THIS APPLICATION. (FI | st person listed will receive all papers) | F FILING AND EXAMINATION FEES: | | |
| ٠ | | | \$ 3652.00 | | |
| Dr. Tim Kain, Patent Scientist Monsanto Company 8350 Minnegan Road | Mich | ael J. Roth | 1 1/1/2/ | | |
| 8350 Minnegan Road | | I. Lindbergh Blvd. | R DATE / L/ 0/04' | | |
| Waterman IL 60556 | St. Lo | ouis, MO | 1 : 768.00 | | |
| Ph. 815-758-9281 Fax 815-758-3 trkain@monsanto.com | 117 | | v DATE 11/26/07 | | |
| | | | D DATE ///XC/0/ | | |
| 11. TELEPHONE (Include area code) | 12. FAX (Include area code) | 13. E-MAIL | 14. CROP KIND (Common Name) | | |
| r mar resultant | 45 175 (45 Million) | trkain@monsanto.com | Corn, Field | | |
| • | 15. GENUS AND SPECIES NAME OF CROP | | 17. IS THE VARIETY A FIRST GENERATION HYBRID? | | |
| Zea mays | | Graminae | ☐ YES X NO | | |
| 18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT (Follow instructions on reverse) | 18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse) | | D OF THIS VARIETY BE SOLD AS A CLASS OF of the Plant Variety Protection Act) | | |
| a. X Exhibit A. Origin and Breeding History of the Varie | ty | ☐ YES (If "yes", answer items 20 ar | V | | |
| b. X Exhibit B. Statement of Distinctness | | 20. DOES THE OWNER SPECIFY THAT SEE | DOFTHIS YES NO | | |
| c. X Exhibit C. Objective Description of Variety | , | VARIETY BE LIMITED AS TO NUMBER O | P CLASSES? | | |
| d. | | IF YES, WHICH CLASSES? ☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED | | | |
| X Voucher Sample (2,500 viable untreated seeds or, verification that tissue culture will be deposited an | for tuber propagated varieties. | 21. DOES THE OWNER SPECIFY THAT SEED OF THIS YES NO VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? IF YES, SPECIFY THE NUMBER 1,2,3, etc. FOR EACH CLASS. | | | |
| repository) g. X Filing and Examination Fee (\$3,652), made payable | a to "Traceurer of the I Inited | ☐ FOUNDATION ☐ REGISTERED | , بسير | | |
| States" (Mail to the Plant Variety Protection Office) | o to Treasurer of the Critical | | LI CERTIFIED ase use the space indicated on the reverse.) | | |
| 22. HAS THE VARIETY (INCLUDING ANY HARVESTED MATE FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRAN OR | ERIAL) OR A HYBRID PRODUCED ISFERRED, OR USED IN THE U.S. | 23. IS THE VARIETY OR ANY COMPONENT PROPERTY RIGHT (PLANT BREEDER'S | OF THE VARIETY PROTECTED BY INTELLECTUAL RIGHT OR PATENTY? | | |
| OTHER COUNTRIES? X YES | NO | X YES NO | | | |
| IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALUSE | E, DISPOSITION, TRANSFER, OR | IF YES, PLEASE GIVE COUNTRY, DATE (REFERENCE NUMBER. (Please use space | OF FILING OR ISSUANCE AND ASSIGNED indicated on reverse.) | | |
| FOR EACH COUNTRY AND THE CIRCUMSTANCES. (PI | | | | | |
| 24. The owners declare that a viable sample of basic seed of for a tuber propagated variety a tissue culture will be depre- | isted in a pandcrepository and maintaine | d for the duration of the certificate. | | | |
| The undersigned owner(s) is(are) the owner of this sexual and is entitled to protection under the provisions of Section | 11 42 Of the Plant Vallety Phileditoli Act | · | ict, uniform, and stablé as required in Section 42, | | |
| Owner(s) is(are) informed that false representation herein | can jeopardize protection and result in per | naitles, | · · · · · · · · · · · · · · · · · · · | | |
| SIGNATURE OF OWNER MINES R. L | 0 | SIGNATURE OF OWNER | | | |
| NAME (Please print or type) Timothy R. Kain | | NAME (Please print or type) | | | |
| CAPACITY OR TITLE Patent Scientist | DATE 12/2/04 | CAPACITY OR TITLE D. | ATE | | |
| ST-470 (02-10-2003) designed by the Plant Variety Protection Office using Wo | nd 2000. Replaces former versions of ST-470, who | ch are obsolete. | See raverse for instructions and information collection burden statement | | |

GENERAL: To be effectively filed with the Plant Variety Protection Office (PVPO), ALL of the following items must be received in the application form signed by the owner; (2) completed exhibits A, B, C, E; (3) for a seed reproduced variety at least 2,500 viable untreated seeds, for a hybrid variety at least 2,500 untreated seeds of each line necessary to reproduce the variety, or for tuber reproduced varieties verification that a viable (in the sense that it will reproduce an entire plant) tissue culture will be deposited and maintained in an approved public repository; (4) check drawn on a U.S. bank for \$3,652 (\$432 filling fee and \$3,220 examination fee), payable to "Treasurer of the United States" (See Section 97.6 of the Regulations and Rules of Practice.) Partial applications will be held in the PVPO for not more than 90 days, then returned to the applicant as unfiled. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 401, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. DO NOT use masking materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of \$432 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

Plant Variety Protection Office Telephone: (301) 504-5518 FAX: (301) 504-5291

Homepage: http://www.ams.usda.gov/science/pvpo/pvp.htm

ITEM

18a. Give:

- (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method:
- (2) the details of subsequent stages of selection and multiplication;
- (3) evidence of uniformity and stability; and
- (4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified
- 18b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:
 - (1) identify these varieties and state all differences objectively;
 - (2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and
 - (3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.
- 18c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.
- 18d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 18e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.
- 19. If "Yes" is specified (seed of this variety be sold by variety name only, as a class of certified seed), the applicant MAY NOT reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. (See Regulations and Rules of Practice, Section 97.103).
- 22. See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.
- 23. See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.
- 21. CONTINUED FROM FRONT (Please provide a statement as to the limitation and sequence of generations that may be certified.)

22. CONTINUED FROM FRONT (Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)

Sold in U.S. - February 2004

23. CONTINUED FROM FRONT (Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)

U.S. Patent

December 8, 2003 - Application Serial No. 10/730,764

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. There is no charge for filling a change of address. The fee for filling a change of ownership or assignment or any modification of owner's name is specified in Section 97.175 of the regulations. (See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority. For example, for agricultural and vegetable crops, contact: Seed Branch, AMS, USDA, Room 213, Building 306, Beltsville Agricultural Research Center-East, Beltsville, MD 20705. Telephone: (301) 504-8089. http://www.ams.usda.gov/lsg/seed.htm

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 3.0 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, sexual orientation, marital or family status, political beliefs, parental status, or protected genetic information. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call 202-720-5964 (voice and

EXHIBIT A

Origin and Breeding History LH370

LH370 was developed from the single cross of LH283 x HC40 by selfing and using the pedigree system of plant breeding. Yield, stalk quality, root quality, disease tolerance, late plant greenness, late plant intactness, ear retention, pollen shedding ability, silking ability and corn borer tolerance were the criteria used to determine the rows from which ears were selected during the development of LH370.

LH283, one of the progenitors of LH370, is a proprietary field corn inbred line of Holden's Foundation Seeds, L.L.C., of Williamsburg, Iowa. In January 1997, Holden's applied for plant variety protection of LH283. On May 29, 1998 LH283 was awarded certificate #970078. A utility patent #5,773,683 issued by the United States Patent Office on June 30, 1998 also protects LH283. HC40 (LH82 x LH93), the other progenitor of LH370, is a proprietary inbred line of F & E Enterprises, L.L.C., Lafayette, Indiana. There is an agreement between Holden's Foundation Seeds, L.L.C. and F & E Enterprises, L.L.C. which gives Holden's permission to use HC40 for breeding. On March 20, 1998 PVP application #9800167 was filed for HC40, however, the application was abandoned on July 1, 2002.

Statement of Stability and Uniformity

Statement of Variants

LH370 has shown uniformity and stability for all traits described in Exhibit C. It has been self-pollinated and ear-rowed a sufficient number of generations, with careful attention to uniformity of plant type to ensure homozygosity and phenotypic stability. The line has been increased both by hand (lowa 2001 and 2002; Hawaii 2002) and sibbed in isolated production fields (Hawaii 2003 and lowa 2003) with continued observations for uniformity. Terry J. Foley, the originating plant breeder, has observed LH370 all five generations it has been increased. The line is stable, uniform and no variant traits have been observed or are anticipated in LH370.

EXHIBIT A (cont'd)

Origin and Breeding History LH370

| Field/Row Hartz Feed Lot | Pedigree LH370 | <u>Location</u> lowa | <u>Year</u> 2003 |
|--------------------------------|----------------------------------|-------------------------|---------------------|
| 02OP2A15 | LH370 | Hawaii | 2003 |
| 30616-30625 | Ex6263 | lowa | 2002 |
| 11990 | Ex6263 | Hawaii | 2002 |
| 44045 | LH283 x HC40@7 | lowa | 2001 |
| 11053 | LH283 x HC40@6 | Mexico 2001 | |
| 1907 | LH283 x HC40@5 | Iowa | 2000 |
| 10303 | LH283 x HC40@4 | Hawaii | 2000 |
| 9662 | LH283 x HC40@3 | lowa | 1999 |
| 17892 | LH283 x HC40@2 | lowa | 1998 |
| 1724 29073 | LH283 x HC40@1 LH283 x HC40@0 | Hawaii Iowa | 1998 1997 |
| 36725 36723 | LH283 HC40 | Hawaii | 1997 |

Statement of Distinctness

Holden's Foundation Seeds L.L.C. believes that Corn Variety LH370 is most similar to Corn Variety LH283, an inbred developed by Holden's Foundation Seeds L.L.C. (Application No. 970078).

Corn Variety LH370 differ from Corn Variety LH283 at the following traits:

2003

| Variety | Ear Shank Length | Leaf Length |
|---------|----------------------|----------------------|
| | (cm) | (cm) |
| LH370 | 7.7 | 82.4 |
| | Std Dev = 0.8, N=5 | Std Dev = 2.4, N=10 |
| LH283 | 11.7 | 72.8 |
| | Std Dev ≈ 1.1, N = 5 | Std Dev. = 3.1, N=10 |
| P_Val | 0.00 | 0.00 |
| Signif. | ** | ** |
| | | |

2004

| Variety | Ear Shank Length | Leaf Length |
|---------|---------------------|---------------------|
| | (cm) | (cm) |
| LH370 | 7.4 | 80.7 |
| | Std Dev = 0.6, N= 5 | Std Dev=3.2, N=10 |
| LH283 | 10.6 | 71.2 |
| | Std Dev = 0.9, N=5 | Std Dev = 2.7, N=10 |
| P_Vai | 0.00 | 0.00 |
| Signif. | ** | ** |

Significance levels are indicated as: + = 10%, * = 5 %, ** = 1%

LH370 has a shorter ear shank length and longer leaf length than LH283.

Description of Experimental Design

The corn varieties LH370, LH283 and B73 were grown at the Waterman, IL observation nursery in years 2003-2004 (2002-2004 for B73). The varieties were planted in 2 row plots with 15 plants per row in each of the three years. Trait data were collected on 10 random representative plants for most traits from each 2 row plot. Data on qualitative traits are usually collected on 10 plants from each 2 row plot. For Exhibit C all data were pooled and reported as means across the six years for subject variety and 2 years for standard variety with standard deviation. The varieties are randomly planted in a 4.5 acre observation nursery which is located within a larger 18 acre field. Besides the observation nursery, this field consists of a research seed increase nursery and an IP seed inventory nursery. The location of each of these individual nurseries is rotated each year to a different location within the 18 acre field. Therefore subject inbreds are not planted adjacent to comparative or standard varieties and may be located in different

EXHIBIT B (revised)

areas of the larger field each year, therefore being influenced by spacial differences within the field. Growing conditions within the field are not uniform as there are some slight topographical variations such as lower areas which may accumulate and retain water or higher areas which are usually drier. The field is tiled and therefore a variety maybe planted close to a tile line while a comparative variety maybe planted further away and in a low spot within the field. Temporal varieties can exist as weather conditions from year to year can vary as well as planting dates can vary from year to year based on weather conditions. Weather conditions each year can vary the maturity rate of the varieties due to either favorable or unfavorable growing conditions.

Trait variability is not observed for each variety within its own test plot-plants are usually uniform and data are collected on the "most" representative plants- variability occurs due to spacial location of the test plot for that variety from year to year and to the temporal variation of weather conditions from year to year during the 2-3 years data are collected.

Waterman Research Station Weather Data 2003-2004

| Date | Average Precip. (mm) | Ave. Monthly Temp – Max. (F°) | Ave. Monthly Temp-Min (F°) | Ave. Monthly Rel. Humid Max (%) | Ave. Monthly Rel. Humid – Min (%) |
|-------------|----------------------------|-------------------------------------|----------------------------------|---------------------------------------|---|
| June 2003 | 1.7 | 76 | 54 | 90.6 | 44.3 |
| July 2003 | 3.3 | 82 | 60 | 93.6 | 53.2 |
| August 2003 | 1.3 | 84 | 61 | 9.3 | 50.5 |
| Sept. 2003 | 2.1 | 74 | 51 | 92.4 | 42.9 |
| June 2004 | 3.1 | 76 | 57 | 92.8 | 50.8 |
| July 2004 | 3.2 | 79 | 59 | 94.9 | 55.6 |
| August 2004 | 3.0 | 75 | 55 | 95.8 | 55.3 |
| Sept. 2004 | 0.5 | 78 | 52 | 95.0 | 43.0 |

United States Department of Agriculture, Agricultural Marketing Service Science Division, Plant Variety Protection Office National Agricultural Library Building, Room 500 Beltsville, MD 20705

OBJECTIVE DESCRIPTION OF VARIETY CORN (Zea mays L.)

| Name of Applicant(s) | | l | | | | |
|--|---|---|---|--|--------------------------------------|--|
| | varioty book to | | urce Variety Name or Temporary Design LH370 | | | |
| Holden's Foundation Seeds L.L.C. | | | | | | |
| Address (Street & No., or R.F.D. No., City, State, Zip Co | FC | OR OFFICIAL USE | | | | |
| 3100 Sycamore Road, DeKalb, IL 60115 U.S.A. | | | PV | 2005 C | 0028 | |
| Place the appropriate number that describes the varietal whole numbers by adding leading zeroes if necessary. Com Traits designated by a '*' are considered necessary for | mlatanoce chau | ld be striver for | ++-h1 | in the spaces be | low Pight instife | |
| COLOR CHOICES (Use in conjunction with Munsell color code Ol=Light Green 06=Pale Yellow O2=Medium Green 07=Yellow O3=Dark Green 08=Yellow-Orange O4=Very Dark Green 09=Salmon O5=Green-Yellow 10=Pink-Orange | describe Purple e less Capped | 21=Buff 22=Tan 23=Brown 24=Bronze | ed (Describe) | | | |
| STANDARD INBRED CHOICES(Use the most similar (in backgrou Yellow Dent Families: Family Members | Yellow 1 | y) of these to ma Dent (Unrelated): 109, ND246, | ke compari: | Sweet Corn: | w-out trial data): 125, P39, 2132 | |
| B14 CM105, A632, B64, B68 Oh7, T232 B37 B37, B76, H84 W117, W153R B73 N192, A679, B73, NC268 W182BN C103 Mo17, Val02, Va35, A682 Oh43 A619, MS71, H99, Va26 White Dent: WF9 W64A, A554, A654, Pa91 C166, H105, Ky228 | | | | Popcorn: SG1533, 4722, HP301, HP7211 Pipecorn: Mo15W, Mo16W, Mo24W | | |
| 1. TYPE: (describe intermediate types in Comments sectio | n) | | T | | | |
| * 2 1=Sweet 2=Dent 3=Flint 4=Flour 5=Pop 6=Orname | | cn | Standard Inbred Name B73 | | | |
| 2. REGION WHERE DEVELOPED IN THE U.S.A.: * 2 1=Northwest 2=Northcentral 3=Northeast 4=Southe6=Southwest 7=Other | ast 5=Southcer | ntral | Standard 2 | d Seed Source NCR | IPS_ | |
| 3. MATURITY (In Region Best Adaptability; show Heat Unit section): DAYS HEAT UNITS * 0 8 9 1 4 9 5. 8 From emergence to 50% | | | DAYS 7 4 | | ITS | |
| * 0 8 8 1 4 9 5.8 From emergence to 50% | of plants in p | oollen | 7 4 | 1 5 5 5.0 | | |
| From 10% to 90% poller | n shed | | | | ' | |
| (*) From 50% silk to optin | num edible qual | ity | | | | |
| From 50% silk to harve | est at 25% mois | ture | | ••••• | | |
| 4. PLANT: St. | andard Deviation | n Sample Size | | Standard Devi | ation Sample Size | |
| * 2 3 2.1 cm Plant Height (to tassel tip) | 7.6 | 20 | 209.6 | 13.2 | 30 | |
| * 0 9 7.0 cm Ear Height (to base of top ear node) | 6.2 | 20 | 6 6.5 | 6.3 | 30 | |
| 0 1 4.3 cm Length of Top Ear Internode | 0.9 | 20 | 1 4.7 | 1.7 | 30 | |
| _ Average Number of Tillers | | - | | | | |
| * 1. 0 Average Number of Ears per Stalk | 0.0 | 20 | 1.0 | 0.0 | 30 | |
| 1 Anthocyanin of Brace Roots: 1=Absent 2=Fair | 20 -Dark | 2 | | | | |
| | | | | | | |
| Application Variety Data | Pa | ge 1 | Standard | Inbred Data | | |

| Application Variety Data | Page | 2 | Standard Inbred Data | | |
|---|---|-------------|-------------------------------|--------------------|-------------|
| 5. LEAF: | Standard Deviation | Sample Size | | Standard Deviation | Sample Size |
| * 0 0 9.6 cm Width of Ear Node Leaf | 0.5 | 20 | 7.5 | 0.9 | 30 |
| * 0 8 1.6 cm Length of Ear Node Leaf | 2.9 | 20 | 7 4.8 | 5.7 | 30 |
| * 5. 3 Number of leaves above top ear | 0.8 | 20 | 5.5 | 0.5 | 15 |
| 1 6. 3 degrees Leaf Angle | 3.6 | 20 | 23.5 | 3.7 | 30 |
| <pre>(measure from 2nd leaf above ear at anthesis to stalk above leaf) * 0 3 Leaf Color (Munsell code 5 GY 3/4)</pre> | | | 0 2 (Muns | ell code 5 GY 4/8) | |
| 2 Leaf Sheath Pubescence(Rate on scale from 1=none to 9=peach fuzz) | | | | | |
| 5 Marginal Waves (Rate on scale from | | CH 1022, | 6 | | |
| 5 Longitudinal Creases (Rate on scale | |) | 6 | | |
| 6. TASSEL: | Standard Deviation | Sample Size | | Standard Deviation | Cample Cire |
| * 3. 3 Number of Primary Lateral Branches | 0.8 | 20 | 5.5 | 0.9 | Sample Size |
| 2 7. 3 Branch Angle from Central Spike | 10.8 | 20 | 2 8. 0 | 8.4 | 30 |
| 4 0.1 cm Tassel Length | 3.8 | 20 | 4 5.6 | 2.6 | 30 |
| (from top leaf collar to tassel tip) 7.1 Pollen Shed (Rate on scale from 0=male | e sterile to 9=heavy sh | ed) | 6.8 | | |
| 0 7 Anther Color (Munsell code 2.5 Y 8/10) | - | | 0 7 (Munsell code 2.5 Y 8/10) | | |
| 0 2 Glume Color (Munsell code 5 GY 4/8) | | | 1 7 (Munsell code 5 RP 5/8) | | |
| 1 Bar Glumes (Glume Bands): 1=Absent 2=Pre | esent | | 1 | | |
| 7a. EAR (Unhusked Data): | | | | | |
| * 0 5 Silk Color (3 days after emergence) (Munse | ell code 2.5 GY 8/6) | | 0 7 (Munsell | code 2.5 Y 8/10) | |
| 0 2 Fresh Husk Color (25 days after 50% silkin | | 4/8) | 0 2 (Munsell code 5GY 4/8) | | |
| 2 1 Dry Husk Color (65 days after 50% Silking) | | | | code 2.5 Y 8/4) | |
| * 1 Position of Ear at Dry Husk Stage: 1=Uprig | ht 2=Horizontal 3=Pende | ent | 1 | | |
| 7 Husk Tightness (Rate on scale from 1=very | loose to 9=very tight) | | 9 | | |
| 1 Husk Extension (at harvest): 1=Short (ears 3=Long (8-10 cm beyond ear | exposed) 2=Medium (<8 tip) 4=Very Long (>10 | cm) | 2 | | |
| 7b. EAR (Husked Ear Data): | Standard Deviation | Sample Size | S | tandard Deviation | Sample Size |
| * 1 3.8 mm Ear Length | 0.3 | 20 | 1 3.7 | 0.4 | 30 |
| * 3 8.7 mm Ear Diameter at mid-point | 0.8 | 15 | 4 4.4 | 1.1 | 15 |
| 8 5. 4 gm Ear Weight | 3.6 | 15 | 1 2 8 .7 | 6.5 | 15 |
| * 1 6 Number of Kernel Rows | 0.9 | 15 | 1 7.6 | 1.7 | 15 |
| 2 Kernel Rows: 1=Indistinct 2=Distinct | | | 2 | | |
| 1 Row Alignment: 1=Straight 2=Slightly | Curved 3=Spiral | | 1 | | |
| 0 7.5 cm Shank Length | 0.7 | 15 | 7.7 | 2.6 | 15 |
| 2 Ear Taper: 1=Slight 2=Average 3=Extre | me | | 2 | | |
| oplication Variety Data | | | Standard Inbred Data | | |

| Application Variety Data | Pag | ge 3 | Standard Inbred Data | | |
|---|--|------------------|--|------------------------|-------------|
| 8. KERNEL (Dried): | Standard Deviation | n Sample Size | | Standard Deviation | Sample Size |
| 0 9.2 mm Kernel Length | 0.4 | 15 | 1 1.7 | 0.1 | 15 |
| 0 6.9 mm Kernel Width | 0.2 | 15 | 7.8 | 0.3 | 15 |
| 0 4.2 mm Kernel Thickness | 0.3 | 15 | 4.0 | 0.2 | 15 |
| 3 4.9 % Round Kernels (Shape Grade) | 2.3 | 500g | 3 8. 7 | 6.4 | 500g |
| 1 Aleurone Color Pattern: 1=Homozygous 2=S | egregating | | 1 | | |
| (*) 1 9 Aleurone Color (Munsell code Lighter tha | n 2.5 Y 9/2) | | 1 9 (Munsell code Lighter than 2.5 Y 9/2) | | |
| * 0 7 Hard Endosperm Color (Munsell code 2.5 Y | 7/8) | | 2 6 (ora | nge) (Munsell code 7.5 | YR 7/8) |
| * 0 3 Endosperm Type: 1=Sweet (sul) 2=Extra Sw 4=High Amylose Starch 5=Waxy Starch 6=H 8=Super Sweet (se) 9=High Oil 10=Other | eet (sh2) 3=Normal 8 igh Protein 7=High 1 | Starch Lysine | 0 3 | | |
| 2 1.2 gm Weight per 100 Kernels (unsized sam | ple) 0.9 | 2100 seeds | 2 3.1 | 0.6 | 2000 seeds |
| 9. COB: | Standard Deviation | n Sample Size | | Standard Deviation | Sample Size |
| * 2 4.9 mm Cob Diameter at mid-point | 0.9 | 15 | 2 7.1 | 1.7 | 15 |
| 1 4 Cob Color (Munsell code 5 R 3/8) | | | 1 1 (Muns | ell code 5 R 6/6) | |
| 10. DISEASE RESISTANCE (Rate from 1 (most susceptible leave blank if not tested; leave Race or Stra |) to 9 (most resista | nnt); | | | |
| A. Leaf Blights, Wilts, and Local Infection Diseases | | porjacinto, . | | | |
| 5 Anthracnose Leaf Blight (Colletotrichum graminico Common Rust (Puccinia sorghi) Common Smut (Ustilago maydis) 7 Eyespot (Kabatiella zeae) 8 Goss's Wilt (Clavibacter michiganense spp. nebras Gray Leaf Spot (Cercospora zeae-maydis) 9 Helminthosporium Leaf Spot (Bipolaris zeicola) Rat Northern Leaf Blight (Exserohilum turcicum) Race Southern Leaf Blight (Bipolaris maydis) Race O Southern Rust (Puccinia polysora) 9 Stewart's Wilt (Erwinia stewartii) Other (Specify) | kense) ce 2 | | 6 5 7 7 7 Race 5 Race 3 Race | 1 | |
| B. Systemic Diseases | | | | | |
| Corn Lethal Necrosis (MCMV and MDMV) Head Smut (Sphacelotheca reiliana) Maize Chlorotic Dwarf Virus (MCDV) Maize Chlorotic Mottle Virus (MCMV) Maize Dwarf Mosaic Virus (MDMV) Strain Sorghum Downy Mildew of Corn (Peronosclerospora so | orghi) | | | n | |
| C. Stalk Rots | | - | | | |
| Anthracnose Stalk Rot (Colletotrichum graminicola) Diplodia Stalk Rot (Stenocarpella maydis) Fusarium Stalk Rot (Fusarium moniliforme) Gibberella Stalk Rot (Gibberella zeae) Other (Specify) | | ···· | - - - - | | |
| D. Ear and Kernel Rots | | | | | |
| Aspergillus Ear and Kernel Rot (Aspergillus flavus Diplodia Ear Rot (Stenocarpella maydis) Fusarium Ear and Kernel Rot (Fusarium moniliforme) Gibberella Ear Rot (Gibberella zeae) Other (Specify) | | | - - - - | | |
| | | | | | |

| Application Variety Data | Pa | ige 4 | Standard Inbre | d Data | |
|---|-----------------------|-------------------|----------------|-----------------------|----------------|
| 11. INSECT RESISTANCE (Rate from 1 (most susceptible) to leave blank if not tested): | 9 (most resista | int); | | | |
| _ Banks Grass Mite (Oligonychus pratensis) Corn Earworm (Helicoverpa zea) _ Leaf-Feeding Silk Feeding : | Standard Deviation | Sample Size | _ | Standard Deviation | Sample Size |
| | | | 3 5 | | |
| Stalk Tunneling: | | | | · | |
| mg larval wtmg larval wtmaize Weevil (Sitophilus zeamaize)Northern Rootworm (Diabrotica barberi)Southern Rootworm (Diabrotica undecimpunctata)Southwestern Corn Borer (Diatraea grandiosella)Leaf Feeding | | | · - | | |
| Stalk Tunneling: cm tunneled/plant Two-spotted Spider Mite (Tetranychus urticae) Western Rootworm (Diabrotica virgifera virgifera) Other (Specify) | | | · _ | | |
| .12. AGRONOMIC TRAITS: | | | | | |
| 6 Stay Green (at 65 days after anthesis) (Rate to 9=excellent.) 0 0.0 % Dropped Ears (at 65 days after anthesis) | on a scale fro | om 1=worst | 2 0 0.0 | | |
| 0 0.0 % Pre-anthesis Brittle Snapping | | | 0 0.0 | | |
| 0 0.0% Pre-anthesis Root Lodging | | | 0 0. 0 | | |
| 0 0.0 % Post-anthesis Root Lodging (at 65 days afte | r anthesis) | | 0 0.0 | | |
| Kg/ha Yield of Inbred Per Se (at 12-13% grain | | | | | İ |
| 13. MOLECULAR MARKERS: (0=data unavailable; 1=data availab. | le but not supr | olied: 2=data sur | nlied) | | |

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COMMENTS (eg. state how heat units were calculated, standard inbred seed source, and/or where data was collected. Continue in Exhibit D):

Heat Unit Calculation: GDU = Daily Max Temp ($<=86^{\circ}F$) + Daily Min Temp ($>=50^{\circ}F$) - $50^{\circ}F$

0 RAPD's

Supplemental data provided for pollen shed, ear weight, % round kernels and weight per 100 kernels from 2006 production parent test data and 2006 seed inventory data.

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